



NESDIS Quarterly Program Review

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Agenda



- FY 2001 Milestones
- Accomplishments
- Management Issues and Problems
- Diversity
- EEO
- Upcoming Events
- Backup

FY2001 Milestones



<u>Milestone</u>	<u>Date</u>	<u>Status</u>
Complete analysis to determine the optimum Launch date for NOAA-M	11/00	Complete
Deliver flight qualified set of U. S. instruments to EUMETSAT for integration on Metop-1	12/00	Partially Complete
Complete siting and security requirements studies for NOAA Satellite Operations Facility	12/00	Complete
Award formulation phase contracts for GOES Advanced Baseline Imager	05/01	Complete
Launch GOES-M	07/01	Complete
SOCC operational in new Control Center *Computer room relocation delayed	08/01	Complete*

METOP Activity Instrument Status





	<u>Metop EM</u>	<u>Metop-1</u>	<u>Metop-2</u>
AVHRR (3)	Delivered	Nov 2001*	Oct 2002*
HIRS (2)	Delivered-EM	Sept 2001	Dec 2001
AMSU (3)	Delivered	Delivered	From Metop EM
SEM (3)	Delivered-EM	Delivered	Nov 2001
SARR (2) (From Canada)	Delivered	Delivered	From Metop EM
SARP (3) (From France)	Delivered-EM	Nov 2001	Sep 2002

* Delay due to newly agreed upon Metop launch load testing


Accomplishments



- GOES
 - GOES-M launched July 23, 2001 
 - Preparing brief for Withee, Kelly, Evans on recommended plan for activating GOES-M after checkout
 - GOES-N Series 
 - GOES-N bus module completed
 - GOES N&O Imager and Sounder delivered to BSS
 - Lockheed Martin SXI on schedule for GOES-N spacecraft integration, Oct '01
 - Initial delivery of ground system completed
 - Advanced Baseline Imager
 - Awarded 3 formulation phase contracts to Ball Aerospace, ITT, and Raytheon Santa Barbara Remote Sensing
 - Advanced Baseline Sounder
 - Released to industry Requests For Information to initiate interaction between industry and NASA's Geostationary Imaging Fourier Transform Spectrometer (GIFTS) Development Team
 - GOES-R Spacecraft
 - Five companies (Boeing Space Systems, TRW, Lockheed Martin, Space Systems/Loral, and Orbital Sciences) were selected to participate in 6-month study due to conclude Aug '01

Accomplishments (Cont.)



- POES
 - NOAA-M spacecraft in storage
 - Planning Launch Date NET Mar '02
 - Aerospace Corp conducting independent review of instruments
 - NOAA-N spacecraft delivery expected March 2003
 - Launch availability projected for July '03
 - NOAA-N' delivery expected Sept 2003
 - Launch availability projected for Jun '05
 - NASA - LMSS Joint Study recommendations being evaluated
 - No large-scale systematic problems found
 - Studying feasibility of early N' launch and on-orbit storage
 - Metop Structural Model testing complete 
 - Issue with AVHRR and Starsem remains
 - Additional AVHRR characterization testing underway (EUMETSAT funded)
 - Thomas B. Schott selected as POES Product Manager

Accomplishments (Cont.)



- Advanced Systems Planning
 - Geostationary Systems
 - GOES-R Users Conference convened
 - 200 participants representing gov't, industry, and foreign
 - Bulletin Board established for on-line follow-up
 - Completed Preliminary Draft GOES-R Mission Statement and transmitted to NASA (July 29) as starting point for GOES-R studies
 - Working with NASA to re-baseline GIFTS/ABS
 - Polar Systems
 - Final version of NPOESS IORD II under review by NOAA and DoD
 - Reviewing formal approval process for IORD II
 - Space Environment Systems
 - First SXI launched on GOES-M, first image Sept 4
 - Joint studies with USAF & OAR of GOES-R solar imagers initiated



Accomplishments (Cont.)



- Ground Systems
 - FY01 Ground Systems PAC budget fully committed
 - Consolidated Workstation
 - Parallel Ops Testing (POT) begins for POES and DMSP
 - Secure Remote Access System
 - Remote dial-in for anomaly resolution
 - Implementation contract proposals being evaluated
 - GOES Product Monitor
 - Display of first GOES-M image
 - System delivery complete, POT begins Aug 20
 - GOES (Telemetry) Archive System
 - Final acceptance testing underway
 - GOES DCS Automated Processing System
 - Critical Design Review – Aug/Sept
 - GOES-N Series Spacecraft Support Ground System
 - Delivery to SOCC, WCDAS, WBU complete
 - Technical Support Services contract proposals being evaluated

Accomplishments (Cont)



- Ground Systems (Cont.)
 - DMSP Mission Planning and Scheduling Subsystem
 - Software delivery complete, operational testing underway
 - Expect to be available for F-16 operations
 - POES Acquisition and Command Subsystem
 - Final Acceptance Testing to be complete Aug '01
 - SOCC Expansion 
 - Operations move completed May '01
 - Computer Room move pending
 - NSOF 
 - “Mat and Tower” design concept selected
 - Antenna siting & critical system infrastructure discussions continue
 - FCDAS
 - Negotiations for 60 acre acquisition continue
 - Environmental Assessment of 600 acre parcel complete

Accomplishments (Cont.)



- Ground Systems (Cont.)
 - JASON Altimeter
 - Investigating operation and data distribution requirements
 - NESDIS Team visited JPL on August 1-2, 2001 to review existing NASA C3 Ground Systems
 - CELSIUS (Carbon Explorer Laser)
 - Potential FY-06 CO₂ Polar Satellite to be launched by NASA and flown by NESDIS
- Special Projects
 - Global Winds Demonstration
 - Hosted quarterly GroundWinds Review June 6 in Silver Spring
 - NCEP completed early calibration tests in support of Operating System Simulation Experiments (OSSE's)

Accomplishments (Cont.)



- GOES GVAR receive station delivered in Costa Rica
 - Hurricane Mitch relief effort
- Office of Radio Frequency Management
 - Efforts to protect GVAR frequency continues
 - Working to locate all GVAR users in Regions II and III
 - Obtained NTIA Spectrum Planning Subcommittee support
 - NPP frequency requirements, stage II
 - NWS radiosonde replacement ground system requirements
 - EMWIN (non-GOES) frequency requirements



Management Issues and Problems



- FB #4 Environmental Conditions
 - Climate control –offices too hot or too cold
- Budget Signature Authority
- Travel Signature Authority
- Integration of SAO into NESDIS
- Status of SFA Elevated Issues
- Geotechnical Concerns re NSOF
- Funding to Complete SOCC Renovation

Diversity/EEO



- Completed reconstruction of inner offices to improve habitability and air quality
- OSD employee completed MBTI Qualifying Workshop
- Minority employee completed Masters Degree in Engineering from George Washington supported under Govt training program
- All actions from SFA Bottom Ten complete

Upcoming Activities



- **First Pictures from GOES-M**
 - Visible (Earth) Aug 17
 - Infrared (Earth) Sept 11
 - X-ray (Sun) Sept 4
- **Dedication of Mt. Washington Observatory Research Bldg.** Aug 22
- **Metop Spacecraft CDR** Sept 11
- **CGMS** Oct 21-25



END OF PRESENTATION



BACKUP



GOES Program

Accomplishments



- GOES
 - GOES-M launched July 23, 2001
 - GOES-N Series
 - GOES-N Bus module completed
 - GOES N&O Imager and Sounder delivered to BSS
 - Lockheed Martin SXI on schedule for GOES-N Spacecraft integration.
 - Initial delivery of ground system completed
 - Advanced Baseline Imager
 - Awarded 3 Formulation Phase Contracts to Ball Aerospace, ITT, and Raytheon Santa Barbara Remote Sensing.

GOES Launch Planning*



<u>Spacecraft</u>	<u>Availability Date</u>	<u>Planning Launch Date</u>
GOES-N	Jan 2003	Jan 2003
GOES-O	Apr 2004	Apr 2005
GOES-P	Apr 2006	Apr 2007
GOES-R	Apr 2010	Apr 2012

* Based on FY03 DOC Submission

GOES-M Status



- Activation
 - GOES-11 and GOES-M as spares after GOES-M checkout
 - Question: Which to activate first when GOES-8 or GOES-10 fail?
 - Goal: Activate SXI as soon as possible
 - Status
 - OAR/AA Letter - “activate GOES-M first”
 - UASF/AFWA - “GOES-M ahead of GOES-11”
 - NWS letter (expected to say GOES-M first)
 - User-level recommendation to activate SXI as soon as possible
 - » Expressed preference for GOES-M over Pacific
- GOES-M is different from GOES I, J, K, L
 - First Solar X-Ray Imager (SXI) – Built by MSFC
 - 6.7 micron water vapor channel (used for upper level winds) resolution improves from 8 km to 4 km
 - 13.3 micron replaces 12.0 micron channel - accuracy of steering level wind height (~500 mb) improves, but degrades aviation support

GOES-N and -O Status



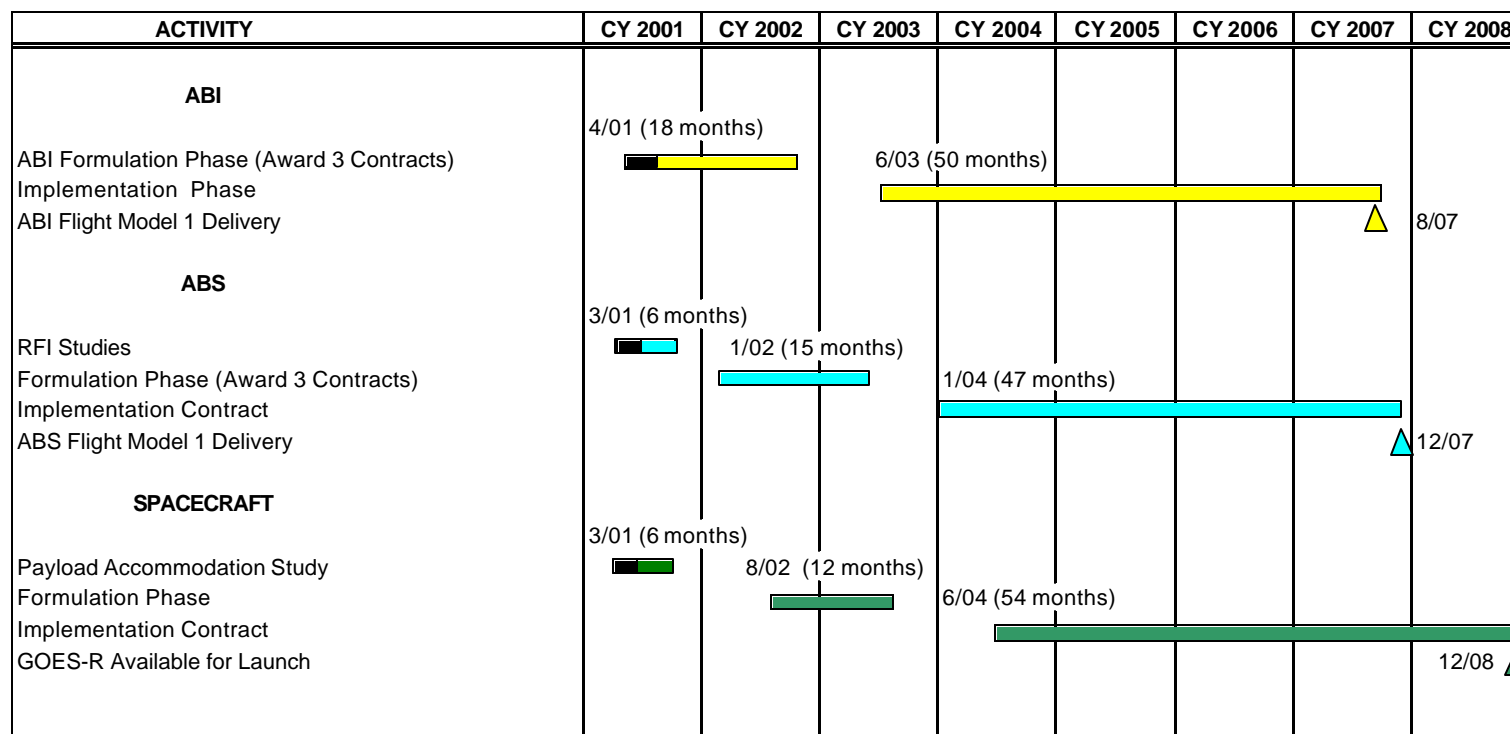
- Imagers & Sounders – Delivered
 - The GOES-N (S/N08) Imager and Sounder delivered to BSS.
 - The GOES-O (S/N09) Imager and Sounder delivered to BSS.
- Spacecraft: GOES-N & -O
 - The GOES-N Bus module completed. Awaiting completion of payload module to start spacecraft level testing.
 - Fabrication of GOES-O following by 2-months.
 - The GOES-N Series MSR was successfully completed on June 13, 2001 at ITT in Fort Wayne, IN.
- NOAA GOES Solar X-Ray Imagers (SXI)
 - Environmental Testing continues on Flight Model 1 (FM1) SXI with completion scheduled for Oct 2001. On schedule for GOES-N Spacecraft integration. (Horse Trade Item)
- Initial delivery of Ground System Completed

GOES-P and -Q Status



- Exercise of options for GOES-P & -Q spacecraft are not required until 2003 and 2005, respectively
- Imagers & Sounders – on schedule
 - The GOES-P Imager and Sounder have commenced sub-system integration at ITT

Advanced Development Schedule



Advanced Baseline Imager/Sounder Status



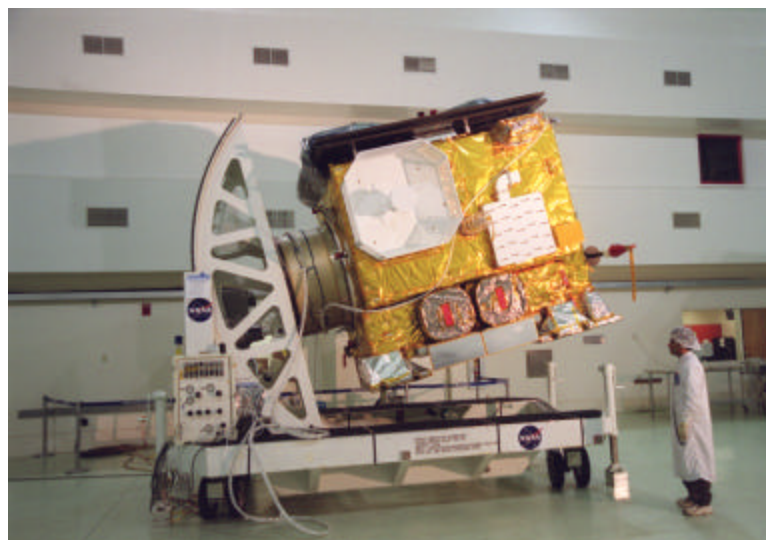
- **ADVANCED BASELINE IMAGER**
 - Formulation Phase Contracts were awarded on May 1, 2001 to Ball Aerospace, ITT, and Raytheon Santa Barbara Remote Sensing.
 - Duration of formulation phase will be 18 months.
 - Status Reviews were held in late July 2001.
- **ADVANCED BASELINE SOUNDER**
 - Released to Industry Requests For Information to initiate interaction between Industry and NASA's Geostationary Imaging Fourier Transform Spectrometer (GIFTS) Development Team.
 - Draft ABS Performance and Operations Requirements Document (PORD) released to industry in mid-June for review and comment.

GOES-R/U Status



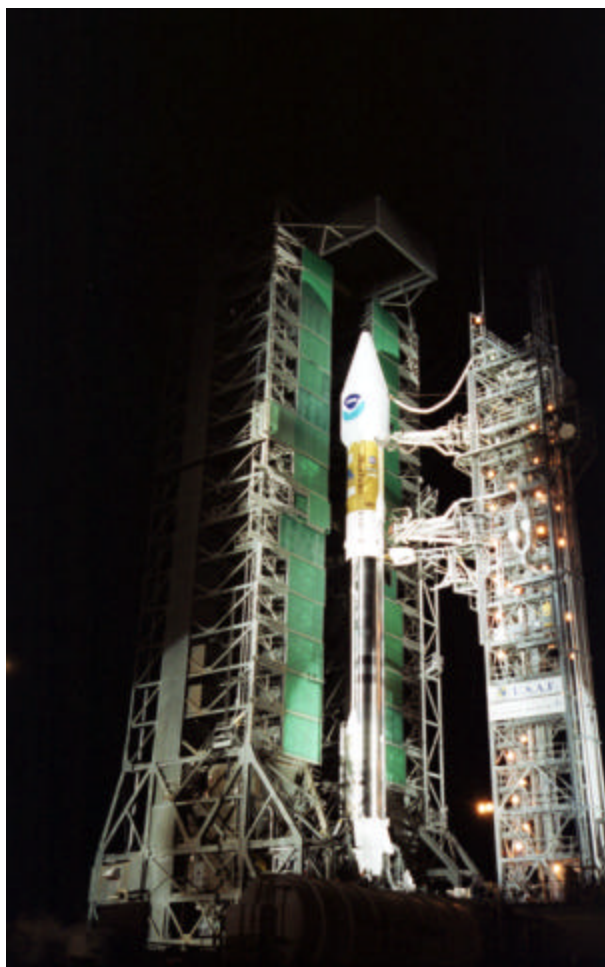
- SPACECRAFT ACCOMMODATION STUDIES
 - Next Generation GOES S/C Accommodation Studies
 - Studies included:
 - Spacecraft Accommodation Study for ABI & ABS
 - GOES Communication payload accommodations
 - Five companies (Boeing Space Systems, TRW, Lockheed Martin, Space Systems/Loral, and Orbital Sciences) were selected to participate in 6-month study due to conclude in Aug '01
 - Mid Term Reviews completed.

GOES-M



(next)

GOES-M Launch



(next)

GOES-M Launch



(next)



POES Program

POES LAUNCH SCHEDULE

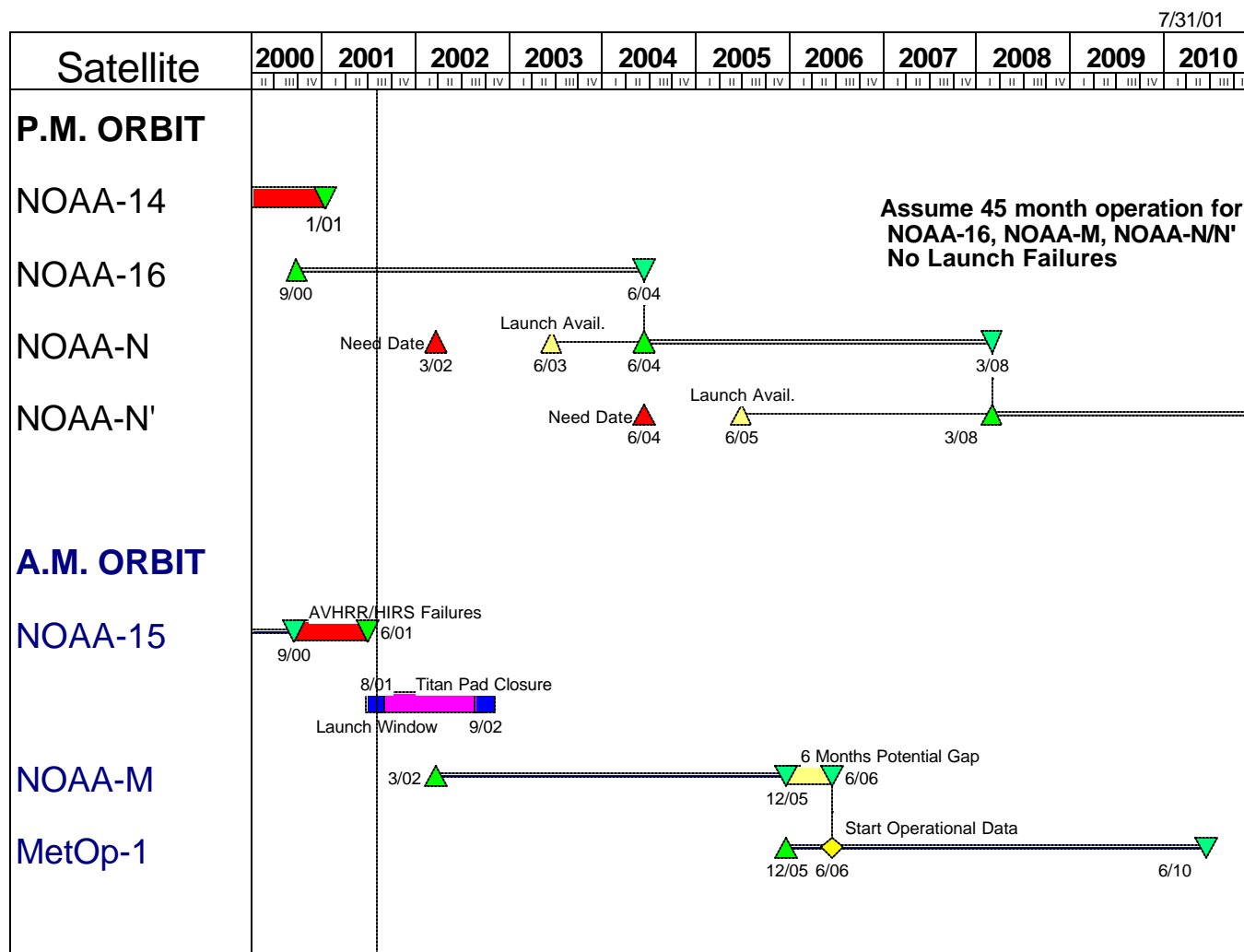
as of July 2001



<u>SATELLITE</u>	<u>LIKELY ORBIT</u>	<u>AVAILABLE</u>	<u>NEED</u>	<u>PLANNING LAUNCH</u>
NOAA-M	AM	Called-up	-----	NET MAR '02
NOAA-N	PM	JUL 03	MAR 02	JUN '04
METOP-1	AM	MAR 04	-----	JUL - DEC '05
NOAA-N'	PM	JUN 05	JUN 04	MAR '08
METOP-2	AM	NOV 04	(DEC 06)	JAN - JUN '10

POES Planned System Coverage

Potential NOAA-15/NOAA-M Gap and NOAA-M/Metop-1 Gap



Spacecraft Production Status



- NOAA-M Status
 - Spacecraft in storage
 - Launch call-up issued December 2000 for August 2001
 - Due to delays in DMSP launch and other Titan mission conflicts Planning Launch Date is N. E. T. March 2002
 - All liens previously identified against NOAA-M have been resolved or a closure path identified
 - Aerospace Corp. has begun independent review of ITT instruments on NOAA-M (HIRS H303 and AVHRR A304):
 - Will focus on production flow and disposition of anomalies
 - Will review NOAA-15 and 16 instrument anomalies
 - Will provide an independent report/briefing by September/October

Spacecraft Production Status



- NOAA-N Status
 - Electrical testing of S/C subsystems and instruments underway
 - Environmental testing will begin in September 2001
 - Spacecraft delivery expected by March 2003
 - Launch vehicle procurement started in January for delivery in Jan '03
 - Launch availability date now projected for July '03

Spacecraft Production Status



- NOAA-N' Status
 - Mechanical assembly nearly complete
 - Electrical testing of bus has begun
 - Spacecraft delivery expected by September 2003
 - Launch vehicle procurement will start in June '03 for delivery in June '05
 - Launch availability date projected for June '05

POES/DMSP Systemic Review



- Joint study co-chaired by NASA & Lockheed Martin
 - 13 Lockheed members, 4 NASA, 2 NOAA, 1 independent (Aerospace)
- Conclusions
 - “In general, on-orbit and in-process anomalies were not related to the transition from East Windsor to Sunnyvale
 - Based upon the facts as examined Team could not read the minds of personnel at the time of transition.
 - No large-scale, systematic problem was found in the processing of the spacecraft. However, recommendations for improvement are contained in this report.”
- Briefed to NASA and NOAA management
- Recommendations being evaluated by POES Project at GSFC, including feasibility of early NOAA-N’ launch and on-orbit storage

METOP Activity



- Metop Vibration Loads
 - Metop Structural Model (SM) testing complete
 - Joint ESA/NASA Tiger Team established to evaluate results
 - Bottom-line
 - Acoustics Testing
 - AVHRR OK for Ariane-5 and Starsem
 - HIRS OK for Ariane-5 and Starsem
 - Sine Vibration Testing
 - HIRS OK for Ariane-5 and Starsem
 - Significant issue remains with AVHRR for Starsem
 - Additional AVHRR characterization testing is underway
 - EUMETSAT Council has approved funding for testing
 - NASA and EUMETSAT have signed agreement to perform test and allow EUMETSAT to transfer funds to US

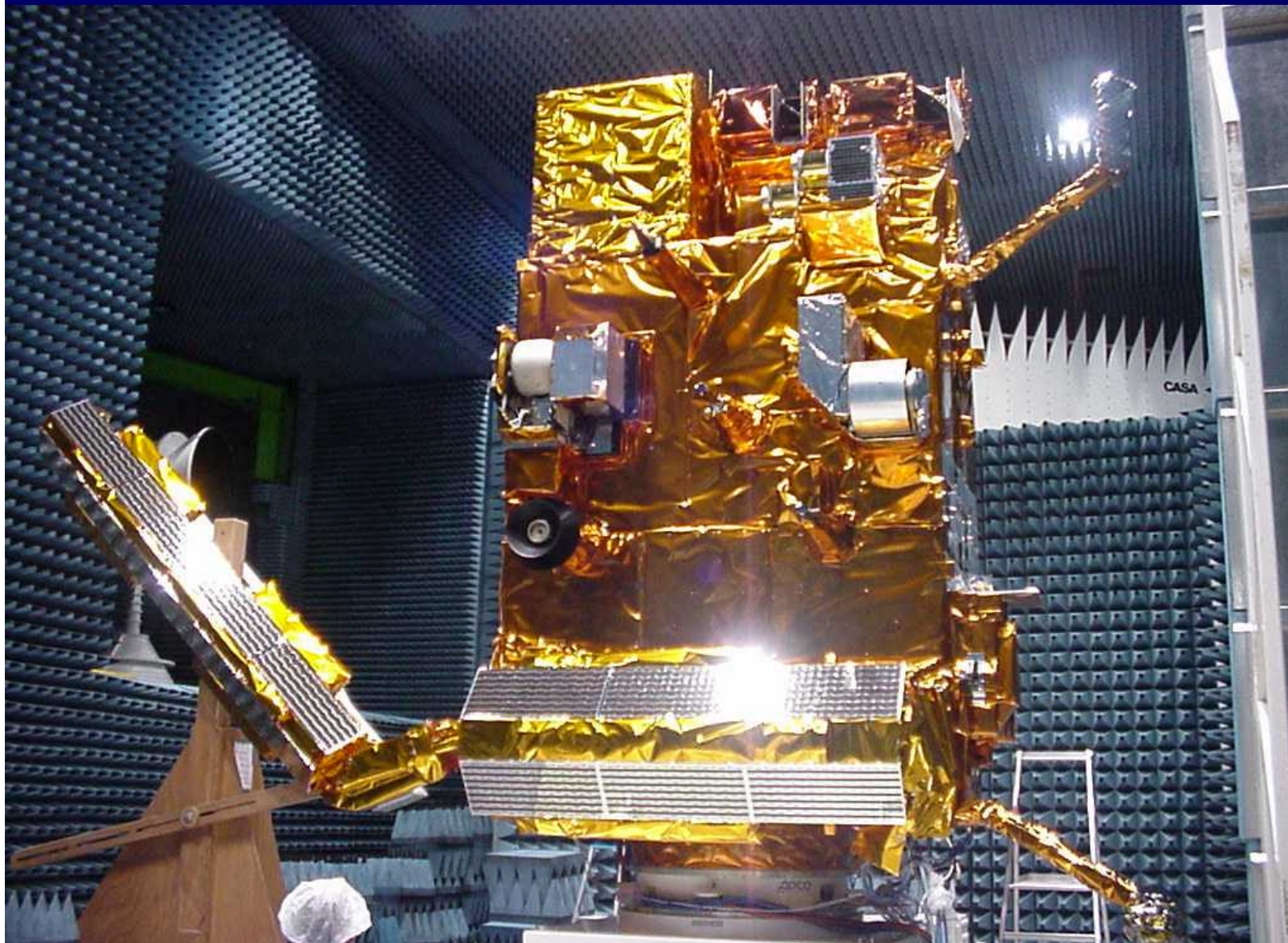
METOP Activity Instrument Status



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SEM (3)	Delivered-EM	Delivered	Nov 2001
SARR (2)	Delivered	Delivered	From Metop EM
(From Canada)			
SARP (3)	Delivered-EM	Nov 2001	Sep 2002
(From France)			

*Delay due to newly agreed upon Metop Launch load testing

METOP Payload Model and ESA EMI Chamber



(back)



Advanced Systems Planning

Accomplishments (Cont)



- Advanced Systems Planning
 - Geostationary Systems
 - Completed Preliminary Draft GOES-R Mission Statement and transmitted to NASA (July 29, 2001)
 - Preparing brief for Withee, Kelly, Evans on recommend plan for activating GOES-M after checkout
 - Led (with OSO) visit of new SOCC facilities for members of Brazilian meteorological satellite community, including the head of the Brazilian Meteorological Service
 - Hosted visit by Korean Meteorological Agency about meteorological satellites
 - Polar systems
 - Final version of NPOESS IORD II under review by NOAA and DoD
 - Reviewing formal approval process for IORD II

Accomplishments



- Advanced Systems Planning (Cont.)
 - GOES User Conference followup
 - Forming a permanent GOES Users' WG
 - GOES Users Bulletin Board established
 - Reco increasing number of ABI channels
 - Prioritized ABI goals based on Conference input
 - Beginning plans for next GOES Users' Conference
 - Solar and Space Environment
 - Solar X-ray Imager successfully launched on GOES M 7/23/01
 - Joint studies for GOES-R Solar Imagers initiated with the USAF and OAR
 - SUAG briefing planned for September for future solar imager and solar wind joint projects.



Ground Systems

Accomplishments (Cont.)



- **Ground Systems (Cont)**
 - GOES Spacecraft Support Ground System (SSGS)
 - Delivery to SOCC, WCDAS, and WBU Completed in early May
 - Delivery to NOAA/SEC pending
 - Next Software Build (#4) due in November 2001
 - COMMITS Contract for NESDIS Technical Support Services
 - Proposals being evaluated
 - DMSP Mission Planning and Scheduling Subsystem (MPSS)
 - Final software delivery Completed
 - Operational Test and Evaluation underway, and to be completed in September 2001
 - POES Acquisition and Command Subsystem (PACS)
 - Final Acceptance Testing (FAT) underway, and to be completed by August 17, 2001

Accomplishments (Cont.)



- **Ground Systems (Cont)**
 - Geostationary Imaging Fourier Transform Spectrometer (GIFTS)
 - NASA/DON funding of the Project is in Question
 - Early September 2001 DON Decision
 - Mid-September 2001 NASA Decision
 - NESDIS Ground Systems needs to spend serious money in FY-02 to make current schedule
 - JASON Altimeter
 - NESDIS Team visited JPL on August 1-2, 2001 to review existing NASA C3 Ground Systems
 - CELSIUS (Carbon Explorer Laser)
 - Potential FY-06 CO₂ Polar Satellite to be launched by NASA and flown by NESDIS
 - Likely to be a WindSat/Coriolis satellite-bus with an Astro/RT Ground System

Accomplishments (Cont.)



- **Ground Systems (Cont)**

- SOCC Expansion

- Transition /Move of all Operational (people) Activities Completed 31 May 2001
 - GOES-M Launch successfully conducted from the new space
 - Move of Computer Room, replacement of unique (non-network) cabling, and configuration documentation are all pending GSA funding!

- NSOF

- EYP and Morphosis are the A&E team
 - “Scheme #1” the “Mat and tower” concept selected for detailed design
 - Successfully passed Peer Review
 - Antenna Siting and Critical Systems Infrastructure designs are not reaching resolution

Accomplishments (Cont.)



- **Ground Systems (Cont.)**

- **FCDAS**

- Phase-2 roadwork ready to contract for summer 2001 construction
 - 60-acre property acquisition in offer and counter offer
 - Government and Property Owner about \$50K apart
 - Environmental Assessment for 600-acre FY-02 property acquisition complete

- **FY-02 Facilities Initiative**

- Program cut by House to a \$2.55M/year flatlined
 - Program plan cannot be achieved at this funding level
 - Drives both CDAS back to a reactive, real-time maintenance program



Special Projects

Accomplishments (Cont.)



- Special Projects
 - Global Winds Demonstration
 - Hosted quarterly GroundWinds review June 6 in Silver Spring
 - Showed early intercomparisons from fall validation campaign
 - NCEP completed early calibration tests in support of Operating System Simulation Experiments (OSSE's)



Radio Frequency Management

Accomplishments (Cont.)

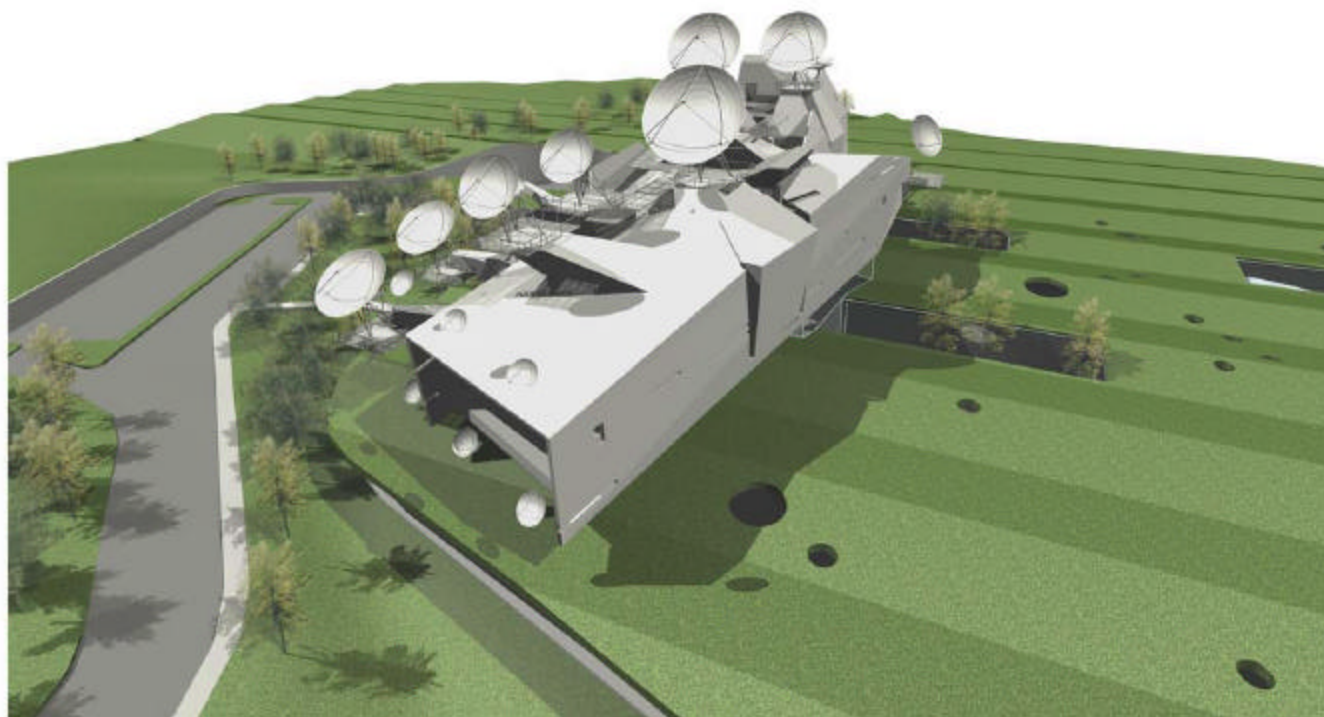


- **Radio Frequency Management**
 - GVAR
 - Effort to locate receivers continues
 - Presented paper on threat at CITEL PCC-III meeting (CITEL is Western Hemisphere regional telecommunications org)
 - Obtained Spectrum Planning Subcommittee (NTIA) support for:
 - NPP support frequencies
 - NWS radiosonde replacement system
 - EMWIN support frequencies
 - Obtained approval for NOAA Weather Radio Site in Indiana



OTHER

NSOF Concept

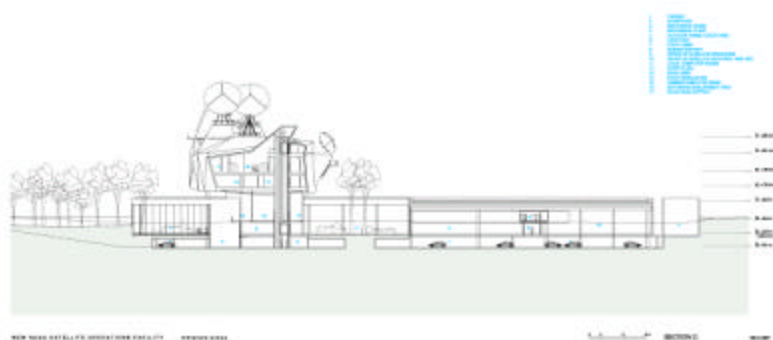


southeast perspective



(next)

NSOF Concept



Office Level



(next)

Roof Level





(back)



GOES-N



GOES-N bus module



GOES-N Flight Yoke: Both XRS/EUVV housing and SXI mass model installed



(back)

Costa Rica GVAR Ribbon Cutting



(back)



GOES-M Launch July 23, 2001



(back)

SOCC Control Center

